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EXAMINER	
MAI, TIEN HUNG	
ART UNIT	PAPER NUMBER
2836	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/563,302	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	TIEN MAI	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 May 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *34,35,46 and 47* is/are allowed.

6)☒ Claim(s) *31-33,36-39,42-45 and 48* is/are rejected.

7)☒ Claim(s) *40 and 41* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/14/2010 has been entered. Upon entering amendment, claims 31-48 have been amended.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (US 6,781,669, "Tanaka").

4. Tanaka discloses method and apparatus for substrate transporting, positioning, holding, and exposure processing, device manufacturing method and device, the apparatus (fig. 1) comprising: an electrostatic chuck for electrostatically attracting a substrate which is rectangular when viewed in a planar view, i.e., liquid crystal display (col. 1, lines 16-26), the liquid crystal display panel inherently has a longer side and a shorter side, the electrostatic chuck comprising a plurality of rod-like electrodes (4)

having shorter sides and longer sides (see fig. 2), wherein shorter sides of each of the rod-like electrodes are oriented toward outside the electrostatic chuck, and longer sides of each of the rod-like electrodes are parallel to longer sides of adjacent rode-like electrodes, said electrostatic chuck further comprising an equivalent means for mounting the rectangular substrate on the electrostatic chuck so that, when the rectangular substrate is mounted on the substrate mounting surface, the rod-like electrodes will be disposed along an edge portion of the rectangular substrate to be treated (see fig. 3). Tanaka also discloses a position detection apparatus (6) to detect the position and direction of the rectangular substrate being transported (col. 8, lines 15-30). Tanaka further discloses that the rectangular substrate is capable to rotate by switching voltage mechanism being controlled by a control apparatus (9) (col. 21, lines 8-67 and also see fig. 12). Tanaka additionally discloses the substrate (P) fitted inside the substrate mounting surface (132) of the electrostatic chuck (see figs. 9 and 12).

5. Tanaka does not explicitly disclose orientation of the rectangular substrate with respect to the substrate mounting surface. There are only two options: (a) the shorter sides of each of the rod-like electrodes extend in parallel to the longer sides of the rectangular substrate; (b) the shorter sides of each of the rod-like electrodes extend in parallel to the shorter sides of the rectangular substrate.

a. The shorter sides of the electrodes extending in parallel to the longer sides of the rectangular substrate provides (i) transportation of the substrate smoother since more electrodes involves in attractive and repulsive forces and

therefore push of individual electrode is evenly across the length of the rectangular substrate.

b. The shorter sides of the electrodes extending in parallel to the shorter sides of the rectangular substrate provides (i) transportation of the substrate rougher since less electrodes involves in attractive and repulsive forces.

6. The choice of one over the other is an engineering design choice based upon available parts and design requirement. The claim would have been obvious because "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 82 USPQ2d 1321 (Fed. Cir. 2007).

7. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Tsuruta et al. (US 6,608745, "Tsuruta").

8. Tanaka discloses method and apparatus for substrate transporting, positioning, holding, and exposure processing, device manufacturing method and device, the apparatus (fig. 1) comprising: an electrostatic chuck for electrostatically attracting a substrate which is rectangular when viewed in a planar view, i.e., liquid crystal display (col. 1, lines 16-26), the liquid crystal display panel inherently has a longer side and a shorter side, the electrostatic chuck comprising a plurality of rod-like electrodes (4) having shorter sides and longer sides (see fig. 2), wherein shorter sides of each of the rod-like electrodes are oriented toward outside the electrostatic chuck, and longer sides

of each of the rod-like electrodes are parallel to longer sides of adjacent rode-like electrodes, said electrostatic chuck further comprising an equivalent means for mounting the rectangular substrate on the electrostatic chuck so that, when the rectangular substrate is mounted on the substrate mounting surface, the rod-like electrodes will be disposed along an edge portion of the rectangular substrate to be treated (see fig. 3). Tanaka also discloses a position detection apparatus (6) to detect the position and direction of the rectangular substrate being transported (col. 8, lines 15-30). Tanaka further discloses that the rectangular substrate is capable to rotate by switching voltage mechanism being controlled by a control apparatus (9) (col. 21, lines 8-67 and also see fig. 12). Tanaka additionally discloses the substrate (P) fitted inside the substrate mounting surface (132) of the electrostatic chuck (see figs. 9 and 12).

9. Tanaka does not explicitly disclose orientation of the rectangular substrate with respect to the substrate mounting surface. There are only two options: (a) the shorter sides of each of the rod-like electrodes extend in parallel to the longer sides of the rectangular substrate; (b) the shorter sides of each of the rod-like electrodes extend in parallel to the shorter sides of the rectangular substrate.

c. The shorter sides of the electrodes extending in parallel to the longer sides of the rectangular substrate provides (i) transportation of the substrate smoother since more electrodes involves in attractive and repulsive forces and therefore push of individual electrode is evenly across the length of the rectangular substrate.

d. The shorter sides of the electrodes extending in parallel to the shorter sides of the rectangular substrate provides (i) transportation of the substrate rougher since less electrodes involves in attractive and repulsive forces.

10. The choice of one over the other is an engineering design choice based upon available parts and design requirement. The claim would have been obvious because "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 82 USPQ2d 1321 (Fed. Cir. 2007).

11. Tanaka discloses the electrostatic chuck connected to three-phase power source (col. 7, lines 57-67). Tanaka does not explicitly disclose the electrostatic chuck is bipole type. Tsuruta discloses an electrostatic chuck supplied with bipole voltage source (col. 6, lines 19-26). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electrostatic chuck of Tanaka in accordance with Tsuruta because using bipole electrostatic chuck is well known in the art.

12. Claim 33 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Motoaki (JP 62211363, "Motoaki").

13. **Regarding claims 33 and 37**, Tanaka discloses method and apparatus for substrate transporting, positioning, holding, and exposure processing, device manufacturing method and device, the apparatus (fig. 1) comprising: an electrostatic chuck for electrostatically attracting a substrate which is rectangular when viewed in a

planar view, i.e., liquid crystal display (col. 1, lines 16-26), the liquid crystal display panel inherently has a longer side and a shorter side, the electrostatic chuck comprising a plurality of rod-like electrodes (4) having shorter sides and longer sides (see fig. 2), wherein shorter sides of each of the rod-like electrodes are oriented toward outside the electrostatic chuck, and longer sides of each of the rod-like electrodes are parallel to longer sides of adjacent rode-like electrodes, said electrostatic chuck further comprising an equivalent means for mounting the rectangular substrate on the electrostatic chuck so that, when the rectangular substrate is mounted on the substrate mounting surface, the rod-like electrodes will be disposed along an edge portion of the rectangular substrate to be treated (see fig. 3). Tanaka also discloses a position detection apparatus (6) to detect the position and direction of the rectangular substrate being transported (col. 8, lines 15-30). Tanaka further discloses that the rectangular substrate is capable to rotate by switching voltage mechanism being controlled by a control apparatus (9) (col. 21, lines 8-67 and also see fig. 12). Tanaka additionally discloses the substrate (P) fitted inside the substrate mounting surface (132) of the electrostatic chuck (see figs. 9 and 12).

14. Tanaka does not explicitly disclose orientation of the rectangular substrate with respect to the substrate mounting surface. There are only two options: (a) the shorter sides of each of the rod-like electrodes extend in parallel to the longer sides of the rectangular substrate; (b) the shorter sides of each of the rod-like electrodes extend in parallel to the shorter sides of the rectangular substrate.

e. The shorter sides of the electrodes extending in parallel to the longer sides of the rectangular substrate provides (i) transportation of the substrate smoother since more electrodes involves in attractive and repulsive forces and therefore push of individual electrode is evenly across the length of the rectangular substrate.

f. The shorter sides of the electrodes extending in parallel to the shorter sides of the rectangular substrate provides (i) transportation of the substrate rougher since less electrodes involves in attractive and repulsive forces.

15. The choice of one over the other is an engineering design choice based upon available parts and design requirement. The claim would have been obvious because "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 82 USPQ2d 1321 (Fed. Cir. 2007).

16. Tanaka does not explicitly thermally sprayed films including high-purity ceramics are formed on the rod-like electrode. Motoaki discloses thermally sprayed films (32) including high-purity ceramics (metallic power of Ti) are formed on an electrode (11). Motoaki teaches that ceramic coating layer provides excellent adhesive powder and corrosion resistance for base material (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to spray a ceramic material onto a base surface to provide a corrosion resistance base surface to protect the base material (abstract).

17. Claim 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Motoaki, and further in view of Machida (US 4,848,536, “Machida”).

18. **Regarding claims 38 and 39**, Tanaka and Motoaki disclose the limitations as discussed above. Tanaka further discloses cross-sections with respect to a vertical cut-through of the rod-like electrode in a "T" shape. Neither Tanaka nor Motoaki explicitly discloses cross-section with respect to a vertical cut-through of the rod-like electrodes in rectangular shapes with wider widths than lengths. Machida discloses a rod-like electrodes (1-9) having rectangular shapes with wider widths than length (fig. 11). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electrode of Tanaka in accordance with the rectangular shape electrode of Machida because using such configuration electrode is well known in the art.

19. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Motoaki, and further in view of Hiramatsu et al. (US 2003/0044653, “Hiramatsu”).

20. Tanaka and Motoaki disclose the limitations as discussed above. Neither Tanaka nor Motoaki explicitly discloses the rod-like electrodes including high-purity isotropic graphite. Hiramatsu discloses that an isotropic graphite material formed in a form disc to provide low thermal expansion ([0500]). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to choose material

having low thermal expansion, such as isotropic graphite to limit the expansion of the chuck so that the ceramic coating does not crack.

21. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Hiramatsu

22. Tanaka discloses method and apparatus for substrate transporting, positioning, holding, and exposure processing, device manufacturing method and device, the apparatus (fig. 1) comprising: an electrostatic chuck for electrostatically attracting a substrate which is rectangular when viewed in a planar view, i.e., liquid crystal display (col. 1, lines 16-26), the liquid crystal display panel inherently has a longer side and a shorter side, the electrostatic chuck comprising a plurality of rod-like electrodes (4) having shorter sides and longer sides (see fig. 2), wherein shorter sides of each of the rod-like electrodes are oriented toward outside the electrostatic chuck, and longer sides of each of the rod-like electrodes are parallel to longer sides of adjacent rode-like electrodes, said electrostatic chuck further comprising an equivalent means for mounting the rectangular substrate on the electrostatic chuck so that, when the rectangular substrate is mounted on the substrate mounting surface, the rod-like electrodes will be disposed along an edge portion of the rectangular substrate to be treated (see fig. 3). Tanaka also discloses a position detection apparatus (6) to detect the position and direction of the rectangular substrate being transported (col. 8, lines 15-30). Tanaka further discloses that the rectangular substrate is capable to rotate by switching voltage mechanism being controlled by a control apparatus (9) (col. 21, lines

8-67 and also see fig. 12). Tanaka additionally discloses the substrate (P) fitted inside the substrate mounting surface (132) of the electrostatic chuck (see figs. 9 and 12).

23. Tanaka does not explicitly disclose orientation of the rectangular substrate with respect to the substrate mounting surface. There are only two options: (a) the shorter sides of each of the rod-like electrodes extend in parallel to the longer sides of the rectangular substrate; (b) the shorter sides of each of the rod-like electrodes extend in parallel to the shorter sides of the rectangular substrate.

g. The shorter sides of the electrodes extending in parallel to the longer sides of the rectangular substrate provides (i) transportation of the substrate smoother since more electrodes involves in attractive and repulsive forces and therefore push of individual electrode is evenly across the length of the rectangular substrate.

h. The shorter sides of the electrodes extending in parallel to the shorter sides of the rectangular substrate provides (i) transportation of the substrate rougher since less electrodes involves in attractive and repulsive forces.

24. The choice of one over the other is an engineering design choice based upon available parts and design requirement. The claim would have been obvious because "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 82 USPQ2d 1321 (Fed. Cir. 2007).

25. Tanaka does not explicitly the rod-like electrodes including high-purity isotropic graphite. Hiramatsu discloses that an isotropic graphite material formed in a form disc to provide low thermal expansion ([0500]). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to choose material having low thermal expansion, such as isotropic graphite to limit the expansion of the chuck so that the ceramic coating does not crack.

26. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Kholodenko et al. (US 6,490,145, "Kholodenko").

27. Tanaka discloses method and apparatus for substrate transporting, positioning, holding, and exposure processing, device manufacturing method and device, the apparatus (fig. 1) comprising: an electrostatic chuck for electrostatically attracting a substrate which is rectangular when viewed in a planar view, i.e., liquid crystal display (col. 1, lines 16-26), the liquid crystal display panel inherently has a longer side and a shorter side, the electrostatic chuck comprising a plurality of rod-like electrodes (4) having shorter sides and longer sides (see fig. 2), wherein shorter sides of each of the rod-like electrodes are oriented toward outside the electrostatic chuck, and longer sides of each of the rod-like electrodes are parallel to longer sides of adjacent rode-like electrodes, said electrostatic chuck further comprising an equivalent means for mounting the rectangular substrate on the electrostatic chuck so that, when the rectangular substrate is mounted on the substrate mounting surface, the rod-like electrodes will be disposed along an edge portion of the rectangular substrate to be

treated (see fig. 3). Tanaka also discloses a position detection apparatus (6) to detect the position and direction of the rectangular substrate being transported (col. 8, lines 15-30). Tanaka further discloses that the rectangular substrate is capable to rotate by switching voltage mechanism being controlled by a control apparatus (9) (col. 21, lines 8-67 and also see fig. 12). Tanaka additionally discloses the substrate (P) fitted inside the substrate mounting surface (132) of the electrostatic chuck (see figs. 9 and 12).

28. Tanaka does not explicitly disclose orientation of the rectangular substrate with respect to the substrate mounting surface. There are only two options: (a) the shorter sides of each of the rod-like electrodes extend in parallel to the longer sides of the rectangular substrate; (b) the shorter sides of each of the rod-like electrodes extend in parallel to the shorter sides of the rectangular substrate.

i. The shorter sides of the electrodes extending in parallel to the longer sides of the rectangular substrate provides (i) transportation of the substrate smoother since more electrodes involves in attractive and repulsive forces and therefore push of individual electrode is evenly across the length of the rectangular substrate.

j. The shorter sides of the electrodes extending in parallel to the shorter sides of the rectangular substrate provides (i) transportation of the substrate rougher since less electrodes involves in attractive and repulsive forces.

29. The choice of one over the other is an engineering design choice based upon available parts and design requirement. The claim would have been obvious because "a person of ordinary skill has good reason to pursue the known options within his or her

technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 82 USPQ2d 1321 (Fed. Cir. 2007).

30. Tanaka does not explicitly disclose the electrostatic chuck stage having rectangular shape. However, Kholodenko discloses generally an electrostatic chuck having circular shape, but other geometries such as square or rectangular shape to accommodate non-circular substrate (col. 5, lines 35-38). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electrostatic chuck of Tanaka in accordance with Kholodenko because electrostatic chuck having rectangular shape is well known in the art.

31. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Kholodenko and Tsuruta.

32. Tanaka discloses method and apparatus for substrate transporting, positioning, holding, and exposure processing, device manufacturing method and device, the apparatus (fig. 1) comprising: an electrostatic chuck for electrostatically attracting a substrate which is rectangular when viewed in a planar view, i.e., liquid crystal display (col. 1, lines 16-26), the liquid crystal display panel inherently has a longer side and a shorter side, the electrostatic chuck comprising a plurality of rod-like electrodes (4) having shorter sides and longer sides (see fig. 2), wherein shorter sides of each of the rod-like electrodes are oriented toward outside the electrostatic chuck, and longer sides of each of the rod-like electrodes are parallel to longer sides of adjacent rode-like

electrodes, said electrostatic chuck further comprising an equivalent means for mounting the rectangular substrate on the electrostatic chuck so that, when the rectangular substrate is mounted on the substrate mounting surface, the rod-like electrodes will be disposed along an edge portion of the rectangular substrate to be treated (see fig. 3). Tanaka also discloses a position detection apparatus (6) to detect the position and direction of the rectangular substrate being transported (col. 8, lines 15-30). Tanaka further discloses that the rectangular substrate is capable to rotate by switching voltage mechanism being controlled by a control apparatus (9) (col. 21, lines 8-67 and also see fig. 12). Tanaka additionally discloses the substrate (P) fitted inside the substrate mounting surface (132) of the electrostatic chuck (see figs. 9 and 12).

33. Tanaka does not explicitly disclose orientation of the rectangular substrate with respect to the substrate mounting surface. There are only two options: (a) the shorter sides of each of the rod-like electrodes extend in parallel to the longer sides of the rectangular substrate; (b) the shorter sides of each of the rod-like electrodes extend in parallel to the shorter sides of the rectangular substrate.

k. The shorter sides of the electrodes extending in parallel to the longer sides of the rectangular substrate provides (i) transportation of the substrate smoother since more electrodes involves in attractive and repulsive forces and therefore push of individual electrode is evenly across the length of the rectangular substrate.

l. The shorter sides of the electrodes extending in parallel to the shorter sides of the rectangular substrate provides (i) transportation of the substrate rougher since less electrodes involves in attractive and repulsive forces.

34. The choice of one over the other is an engineering design choice based upon available parts and design requirement. The claim would have been obvious because "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 82 USPQ2d 1321 (Fed. Cir. 2007).

35. Tanaka does not explicitly disclose the electrostatic chuck having rectangular shape. However, Kholodenko discloses generally an electrostatic chuck having circular shape, but other geometries such as square or rectangular shape to accommodate non-circular substrate (col. 5, lines 35-38). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electrostatic chuck of Tanaka in accordance with Kholodenko because electrostatic chuck having rectangular shape is well known in the art.

36. Tanaka discloses the electrostatic chuck connected to three-phase power source (col. 7, lines 57-67). Tanaka does not explicitly disclose the electrostatic chuck is bipole type. Tsuruta discloses an electrostatic chuck supplied with bipole voltage source (col. 6, lines 19-26). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electrostatic chuck of Tanaka in accordance with Tsuruta because using bipole electrostatic chuck is well known in the art.

37. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Kholodenko and Motoaki.

38. Tanaka discloses method and apparatus for substrate transporting, positioning, holding, and exposure processing, device manufacturing method and device, the apparatus (fig. 1) comprising: an electrostatic chuck for electrostatically attracting a substrate which is rectangular when viewed in a planar view, i.e., liquid crystal display (col. 1, lines 16-26), the liquid crystal display panel inherently has a longer side and a shorter side, the electrostatic chuck comprising a plurality of rod-like electrodes (4) having shorter sides and longer sides (see fig. 2), wherein shorter sides of each of the rod-like electrodes are oriented toward outside the electrostatic chuck, and longer sides of each of the rod-like electrodes are parallel to longer sides of adjacent rode-like electrodes, said electrostatic chuck further comprising an equivalent means for mounting the rectangular substrate on the electrostatic chuck so that, when the rectangular substrate is mounted on the substrate mounting surface, the rod-like electrodes will be disposed along an edge portion of the rectangular substrate to be treated (see fig. 3). Tanaka also discloses a position detection apparatus (6) to detect the position and direction of the rectangular substrate being transported (col. 8, lines 15-30). Tanaka further discloses that the rectangular substrate is capable to rotate by switching voltage mechanism being controlled by a control apparatus (9) (col. 21, lines 8-67 and also see fig. 12). Tanaka additionally discloses the substrate (P) fitted inside the substrate mounting surface (132) of the electrostatic chuck (see figs. 9 and 12).

39. Tanaka does not explicitly disclose orientation of the rectangular substrate with respect to the substrate mounting surface. There are only two options: (a) the shorter sides of each of the rod-like electrodes extend in parallel to the longer sides of the rectangular substrate; (b) the shorter sides of each of the rod-like electrodes extend in parallel to the shorter sides of the rectangular substrate.

m. The shorter sides of the electrodes extending in parallel to the longer sides of the rectangular substrate provides (i) transportation of the substrate smoother since more electrodes involves in attractive and repulsive forces and therefore push of individual electrode is evenly across the length of the rectangular substrate.

n. The shorter sides of the electrodes extending in parallel to the shorter sides of the rectangular substrate provides (i) transportation of the substrate rougher since less electrodes involves in attractive and repulsive forces.

40. The choice of one over the other is an engineering design choice based upon available parts and design requirement. The claim would have been obvious because "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 82 USPQ2d 1321 (Fed. Cir. 2007).

41. Tanaka does not explicitly disclose the electrostatic chuck having rectangular shape. However, Kholodenko discloses generally an electrostatic chuck having circular shape, but other geometries such as square or rectangular shape to accommodate non-

circular substrate (col. 5, lines 35-38). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electrostatic chuck of Tanaka in accordance with Kholodenko because electrostatic chuck having rectangular shape is well known in the art.

42. Tanaka does not explicitly thermally sprayed films including high-purity ceramics are formed on the rod-like electrode. Motoaki discloses thermally sprayed films (32) including high-purity ceramics (metallic power of Ti) are formed on an electrode (11). Motoaki teaches that ceramic coating layer provides excellent adhesive powder and corrosion resistance for base material (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to spray a ceramic material onto a base surface to provide a corrosion resistance base surface to protect the base material (abstract).

43. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Kholodenko and Hiramatsu

44. Tanaka discloses method and apparatus for substrate transporting, positioning, holding, and exposure processing, device manufacturing method and device, the apparatus (fig. 1) comprising: an electrostatic chuck for electrostatically attracting a substrate which is rectangular when viewed in a planar view, i.e., liquid crystal display (col. 1, lines 16-26), the liquid crystal display panel inherently has a longer side and a shorter side, the electrostatic chuck comprising a plurality of rod-like electrodes (4) having shorter sides and longer sides (see fig. 2), wherein shorter sides of each of the

rod-like electrodes are oriented toward outside the electrostatic chuck, and longer sides of each of the rod-like electrodes are parallel to longer sides of adjacent rode-like electrodes, said electrostatic chuck further comprising an equivalent means for mounting the rectangular substrate on the electrostatic chuck so that, when the rectangular substrate is mounted on the substrate mounting surface, the rod-like electrodes will be disposed along an edge portion of the rectangular substrate to be treated (see fig. 3). Tanaka also discloses a position detection apparatus (6) to detect the position and direction of the rectangular substrate being transported (col. 8, lines 15-30). Tanaka further discloses that the rectangular substrate is capable to rotate by switching voltage mechanism being controlled by a control apparatus (9) (col. 21, lines 8-67 and also see fig. 12). Tanaka additionally discloses the substrate (P) fitted inside the substrate mounting surface (132) of the electrostatic chuck (see figs. 9 and 12).

45. Tanaka does not explicitly disclose orientation of the rectangular substrate with respect to the substrate mounting surface. There are only two options: (a) the shorter sides of each of the rod-like electrodes extend in parallel to the longer sides of the rectangular substrate; (b) the shorter sides of each of the rod-like electrodes extend in parallel to the shorter sides of the rectangular substrate.

o. The shorter sides of the electrodes extending in parallel to the longer sides of the rectangular substrate provides (i) transportation of the substrate smoother since more electrodes involves in attractive and repulsive forces and therefore push of individual electrode is evenly across the length of the rectangular substrate.

p. The shorter sides of the electrodes extending in parallel to the shorter sides of the rectangular substrate provides (i) transportation of the substrate rougher since less electrodes involves in attractive and repulsive forces.

46. The choice of one over the other is an engineering design choice based upon available parts and design requirement. The claim would have been obvious because "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 82 USPQ2d 1321 (Fed. Cir. 2007).

47. Tanaka does not explicitly disclose the electrostatic chuck having rectangular shape. However, Kholodenko discloses generally an electrostatic chuck having circular shape, but other geometries such as square or rectangular shape to accommodate non-circular substrate (col. 5, lines 35-38). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electrostatic chuck of Tanaka in accordance with Kholodenko because electrostatic chuck having rectangular shape is well known in the art.

48. Tanaka does not explicitly the rod-like electrodes including high-purity isotropic graphite. Hiramatsu discloses that an isotropic graphite material formed in a form disc to provide low thermal expansion ([0500]). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to choose material having low thermal expansion, such as isotropic graphite to limit the expansion of the chuck so that the ceramic coating does not crack.

Allowable Subject Matter

49. Claims 40 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

50. Regarding claims 40 and 41, the prior art of record does not disclose the cross-sections of with respect to a vertical cut-through said rod-like electrode having stepped shapes or roofing tiles shapes.

51. Claims 34, 35, 46 and 47 are allowed.

52. Regarding claims 34 and 46, the prior art of record does not disclose the cross-sections with respect to a vertical cut-through of the rod-like electrodes being in stepped shapes.

53. Regarding claims 35 and 47, the prior art of record does not disclose the cross-section with respect to a vertical cut-through of the rod-like electrode being in roofing tiles shapes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIEN MAI whose telephone number is 571-270-1277. The examiner can normally be reached on M-Th: 8:00-7:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jared Fureman can be reached on 571-272-2391. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Tien Mai/
Examiner, Art Unit 2836
06/09/2010

/Stephen W Jackson/
Primary Examiner, Art Unit 2836